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FOURTEEN HITHERTO UNRECOGNIZED AFRICAN RODENTS¹

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A study of the rodents of the American Museum Congo Expedition entailed identification of much additional material in the collections of this museum, and required, moreover, the examination of material in certain European museums. During the course of these investigations it was found that a number of specimens in American Museum collections and in the British Museum could not be assigned to known forms. In this paper some of these specimens are described.

I wish to acknowledge my great appreciation of the friendly courtesy of Mr. M. A. C. Hinton of the British Museum, who allowed me to study the collections in his charge and granted me the privilege of describing as new certain of the specimens named below. My thanks are also extended to Mr. H. E. Anthony of the American Museum, for his permission to describe a handsome gerbille that he collected on the White Nile, and to record his field notes on the species. The drawings are by Dr. Florence Dowden Wood.

In these descriptions where the color terms are those of Ridgeway, they are capitalized.

Otomys tropicalis faradjius, new subspecies

TYPE.—American Museum of Natural History No. 50357. American Museum Congo Expedition No. 1561. Male adult. Collected at Faradje, upper Uele district, Belgian Congo, March 26, 1911, by James P. Chapin. The type is a skin with skull, both in good condition.

PARATYPES.—Six males and three females collected at the type locality between February 21 and April 15, 1911 (A.M.N.H. Nos. 50353–50356 and 50358–50362).

GENERAL CHARACTER.—Dorsal color very dark reddish-brown, size small. The large ears are almost hairless. Skull proportions broader than in *elgonis*; the interparietal shorter and the basisphenoid more delicate than in that subspecies.

DESCRIPTION.—General color above not near any of Ridgeway's standards, but perhaps nearest Chestnut. The light bands of the dorsal hairs are Buckthorn Brown. Proximal to this band is one of intensely dark Chestnut. The numerous guard hairs are an iridescent dark brown. The under side is gray, washed with Light Buff, which is the color of the tips of the longer hairs. Hands and feet are clothed with glossy

¹Scientific results of the Congo Expedition. Mammalogy, No. 13.

dark Chestnut hairs. The tail is black above, light below. The light nasal patch is Ochraceous-Buff.

The skull is typical of the *tropicalis* group, differing from its neighbor *elgonis* in its smaller size and the diagnostic characters given above.

MEASUREMENTS.—Collector's measurements of the type: total length, 277 mm.; tail, 97; hind foot with claw, 32; height of ear from notch, 22. Skull measurements: greatest length, 39.7; condylobasal length, 38.6; length of nasal suture, 16.9; greatest breadth across both nasals, 7.6; zygomatic breadth, 19.8; interorbital breadth, 4.7; breadth of brain case, 15.6; skull height, 12.6; height from sinciput to alveolar border M^3 , 12.8; palatal length, 21.6; length of anterior palatal foramina, 7.2; width of palate inside M^1 , 1.9; crown length of upper tooth row, 8.4; condylo-incisive length of mandible, 26.3.

Taterillus emini anthonyi, new subspecies

TYPE.—American Museum of Natural History No. 82211. Taylor Sudan Expedition No. 3006. Female adult. Collected on the west bank of the White Nile, 20 miles south of Jebelein, Anglo-Egyptian Sudan, February 2, 1927, by H. E. Anthony. The type is a well-made skin, complete and in unworn pelage, accompanied by a skull complete except for the malar bones which have been lost.

PARATYPE.—A.M.N.H. No. 82208. Female adult. Collected at Akona, west bank of the White Nile, February 7, 1927, by H. E. Anthony. A slightly younger specimen than the type. The malar bones of this skull also are missing.

GENERAL CHARACTERS.—A northern pallid representative of the *emini-butleri* group, externally characterized by extremely pale coloration, large body size, and long tail. Its skull is larger than those of its nearest relatives, *butleri* and *emini*, and differs from these also in having broader, flatter-topped nasals, strong supraorbital and temporal ridges. The pterygoid region is characteristic, the pterygoid fossa being short and broad, the pterygoid processes strong, very nearly straight and widely divergent.

DESCRIPTION.—General color above, from nose to the base of the tail, Tawny-Olive, paling high on the flanks to Cinnamon-Buff. The comparatively light shade of the upper surface is due to the extremely light color of the middle band of the hair shaft which in this race is near Chamois, and in its most closely related subspecies, *butleri*, is Honey Yellow. The belly, chin, throat, lower half of cheeks, supraorbital spot, and the feet are pure white. The dark eye ring is less pronounced than in *emini*. The short hairs on the upper side of the basal two-thirds of the tail are near Bister. The longer hairs on the upper part of the terminal third of the tail are Bone Brown. Those of the under side of the tail are wide. The mammae are 2-0-2=8.

The skull of this race is larger than that of its relatives but in general proportions is in no way peculiar. It differs, however, in having relatively broad flat-topped nasals (in the older specimen), and well developed supraorbital and temporal ridges. These ridges are prominent not only in the type but also in the younger paratype. The most striking difference between this and the other races lies in the pterygoid region, which is characterized by a shallow broad fossa, flanked by short stout divergent pterygoid processes. This is in marked contrast to *butleri* and *emini*, in which the fossa is long, narrow, and bounded laterally by thin pterygoid processes. The less striking difference between the White Nile race and *T. e. conicus* is indicated in the accompanying figure.

MEASUREMENTS.—Collector's measurements of the type and paratype (the latter given in parentheses): total length, 316 (298) mm.; tail, 182 (170); hind foot with claw, 35 (35). Skull measurements: greatest length, 37.4; condylobasal length, 33.3; length of nasal suture, 14.5; zygomatic breadth at posterior tip of maxillæ, 18.0; interorbital breadth, 7.3; breadth of brain case, 15.7; skull height, 14.4; palatal length, 19.7; length of posterior palatal foramina, 4.8; width of palate inside M^1 , 3.8; length of pterygoid fossa, 4.2; length of bullæ, 10.2; alveolar length of upper tooth row, 6.0; width M^1 , 2.0; condylo-incisive length of mandible, 23.0.

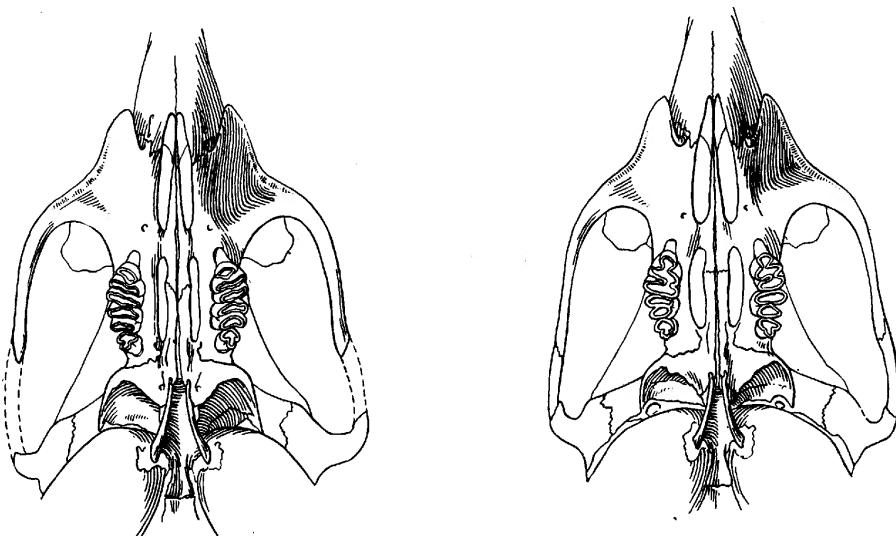


Fig. 1

The large tufted-tailed gerbilles of the Jebelein district are strikingly different from the types and topotypes of other described species, but specimens in the British Museum from intermediate localities suggest complete intergradation. The subspecies here described resembles *butleri* more closely than any other known form, but there also appears to be intergradation between *butleri* and *emini* so that I am inclined to consider the new form a race of the earliest described member of the group, *emini*. I would also place *butleri*, *clivosis*, and *lacustris* as sub-species of *emini*. Specimens from 50 miles west of El Obeid, Kordofan, are in many respects intermediate between *T. e. butleri* and *T. e. anthonyi*.

Field notes in reference to the type are as follows: "February 2. . . . It was taken in a steel trap set in a burrow which I had opened out and proceeded as for a gopher set, covering the pit with debris to shut out

the light. There was a mound of fresh earth hiding the outlet of the burrow and the appearance of the 'working' was very gopher-like. I do not see how an animal with such weak fore legs could loosen such a pile of the lumpy sun-baked Nile mud. The other gerbille [*Tatera robusta*] was caught at a good-sized open burrow."

This gerbille, whose beautifully prepared skins it has been my pleasure to study, is named for its collector.

Lophuromys luteogaster, new species

TYPE.—American Museum of Natural History No. 49647. American Museum Congo Expedition No. 2360. Female adult. Collected at Medje, Ituri district, Belgian Congo, April 10, 1914, by Herbert Lang. The type is a skin with skull, both in good condition.

PARATYPE.—A.M.N.H. No. 49648. Female juvenile. Collected the same day and at the same place as the type. Skin with skull, the latter with the brain case crushed. This specimen, the only other known, agrees closely with the type in all characters except size, and the color of the under surface of the skin which here contains a stronger element of red, and is near Pinkish Cinnamon.

GENERAL CHARACTER.—This Ituri relative of *Lophuromys woosnami* is characterized by pale coloration, great extension of the light belly color, which color extends from root to tip of the belly hairs, uncolored tail, small ears and feet. Cranially it is marked by a broad zygomatic plate (about double the width of that of *woosnami*), short broad outline of skull (particularly marked in the nasal region), and presence of postorbital processes (completely lacking in *woosnami*).

DESCRIPTION.—Color above, uniformly Olive-Brown, unmarred by any lighter ticking. On the sides this pales rather sharply to the clear Warm Buff of the belly, a shade which extends from chin to tail base and on to the hands and feet. Within this area the hairs are uniformly colored from base to tip. The same Warm Buff colors the bases of the dorsal hairs but is completely masked by the dark terminal color. The tail is uniformly colored Vandyke Brown, above and below. Its hairs are small and inconspicuous. The scales, smaller than in related species, are arranged in rings about twenty-two to the centimeter in the middle of the tail. (In *woosnami* these are fifteen to the centimeter.)

The skull is short and broad, particularly in the nasal region. Well-marked postorbital processes are present, unlike the condition seen in other long-tailed *Lophuromys*. The zygomatic plate is about double the width of that of *L. woosnami* from Mount Ruwenzori. The molars are narrower than those of typical *L. woosnami*, but not more so than in *L. w. prittiei* of the Kivu.

MEASUREMENTS.—The measurements given are those of the type, except such as are in parentheses, which are of the juvenile paratype. Collector's measurements taken in the flesh: total length, 212 (143) mm.; length of tail, 102 (74); length of hind foot with claw, 22 (20); height of ear from notch, 18 (15). Cranial measurements: greatest length, 29.2; condylobasal length, 27.8; basilar length, 24.5; zygomatic breadth, 24.5; interorbital breadth, 6.0; width across postorbital processes, 7.5; length of zygomatic plate, 3.4; height from bullae to crown, 10.2; length of nasals, 12.1; diastema, 7.5; breadth of palate inside M^1 , 3.6; length of upper tooth row, 4.8; width M^1 , 1.8; condylo-incisive length of mandible, 18.2.

Lophuromys luteogaster, though resembling *L. woosnami* of Mt. Ruwenzori more than any other known species, approaches *L. nudicaudus* of the Cameroons in some characters. Thus, in body size, tail length, foot length, and cranial length, the Ituri animal is intermediate between the other two species. It resembles the Cameroons species in having a unicolored tail, in possessing postorbital processes, and lacking supraorbital ridges; in having the interorbital roof gently rounded, and in having a short muzzle with short palatal foramina. However, in such characters as its foot and belly color, the size of its tail scales, and its broad zygomatic plate, it is unique, and for the present I feel it advisable to consider it a full species.

Cricetomys gambianus langi, new subspecies

TYPE.—American Museum of Natural History No. 51153. American Museum Congo Expedition No. 1198. Male adult. Collected at Faradje, upper Uele district, Belgian Congo, January 12, 1913, by Herbert Lang. The type is a study-skin with skull, complete and in good condition. The molars are moderately worn.

GENERAL CHARACTER.—This subspecies combines a very light-hued pelage with large skull and molars, narrow nasals and interparietals.

DESCRIPTION.—General color above a grayish Rood's Brown, formed by the admixture of dark glossy Vandyke Brown guard hairs, and the Vinaceous-Buff tips to the smaller hairs. The lower flanks are Vinaceous-Buff. There is no sharp color demarcation between the flanks and the belly which, in the thoracic and abdominal regions, is superficially Vinaceous-Buff, overlying the clearly visible gray of the basal part of the hairs. (In some other specimens this area is largely white.) The inguinal region is white. The lips are Pinkish Buff. This area is continuous with and shades gradually into the whiter areas of the lower cheeks, chin, throat, axillae, ulnar surface of the forearms, margins of the fore feet, and the toes. There is also a Pinkish Buff preauricular spot. The eye ring is Bone Brown, about four millimeters wide above the eye, about six below. The numerous hairs of the outer surface of the ear conch are Bone Brown, while the scattered few inside are much lighter brown. The metatarsal area is Warm Sepia, flanked by white on the foot margins and the toes. The basal 55 per cent of the tail is black, the distal portion white.

The skull, as in related subspecies, is rather short, with a broad brain case, broad interorbital region, strong supraorbital ridges, and the characters noted above. The nasals taper evenly from the tip to the rear.

MEASUREMENTS.—Those following measurements of the type are of a female paratype No. 51151. Collector's measurements: total length, 660 (660) mm.; tail length, 340 (345); length of hind foot with claw, 62 (65); height of ear from notch, 37 (39). Cranial measurements: greatest length, 67.0 (67.5); condylo-incisive length, 63.0 (63.9); zygomatic breadth, 31.9 (32.1); interorbital breadth, 10.7 (10.0); breadth of brain case, 22.7 (22.5); length of nasals, 27.6 (26.6); breadth across nasals, 8.8 (8.8); length of interparietal, 5.3 (5.0); breadth of interparietal, 7.9 (7.9); height of brain case, basal suture to crown, 18.6 (17.7); width of upper arm of anterior zygomatic root, 2.2 (2.1); width of lower arm of anterior zygomatic

plate), 5.6 (6.2); palatal length, 36.2 (36.5); diastema, 21.0 (21.0); anterior palatal foramina, 6.0 (6.8); breadth of palate across M^1 , 13.3 (13.2); length of upper molar tooth row, 10.5 (10.7); breadth M^1 , 3.3 (3.3); breadth of pterygoid fossa 5.1 (5.4); condylo-incisive length of mandible, 47.6 (47.6).

Cricetomys gambianus langi differs from the Sudanese race, *grahami* in having a generally lighter color, and far larger skull and molars. It is distinguished from *dichrura* of Southern Nigeria, in much paler, grayer coloration; lesser extension of black onto the tail; longer, denser hair, particularly on the belly, narrower nasals and interparietal. *C. g. langi* is very nearly the same general shade as *C. g. olivae* of Northern Nigeria but is unlike that subspecies in having a shorter tail, hairier belly, white borders to the feet, narrower skull, narrower interparietal, no post-orbital process, narrow limbs of the anterior zygomatic roots, and narrower pterygoid fossa. The newly recognized race of the savannas of the northeastern Congo seems most closely related to *dichrura*.

This new subspecies is represented in American Museum collections by fifteen specimens, including the type. All were secured at Faradje and Niangara by the Congo Expedition. I am pleased to name the race for Mr. Lang, collector of the series.

Dasmys nudipes edsoni, new subspecies

TYPE.—American Museum of Natural History No. 86889. Chapin-Edson Collection No. 2179. Male adult. Collected at Lukolela, middle Congo, November 8, 1930, by James P. Chapin. The type is a well-made study-skin in unworn pelage, with skull. The skull is perfect except for the posterior margin of the palate and the posterior median wall of the left bulla, which are missing. Its molars are well worn.

GENERAL CHARACTER.—Differing from the Angolan *Dasmys nudipes* in generally smaller size, shorter foot, shorter hair and smaller skull, relatively narrow brain case, and small molars.

DESCRIPTION.—General color above, Chocolate. In certain lights the tips of the guard hairs reflect a greenish iridescent tone. The sides pale to a mixture of Cinnamom-Buff and gray, the latter owing to the exposure of the basal part of the hair. The tips of the hairs of the under side are white but their dark gray bases are much exposed. The fore and hind feet are colored as the flanks. The short inconspicuous tail hairs are dark brown except on the under side of the basal half, where they are white.

The skull differs little from typical *nudipes* except in characters noted above. The proportions in general are lighter. The sutures of the roof of the brain case in the type are highly convoluted, whereas those of all Angolan specimens of *nudipes* at hand have relatively straight simple sutures. As in *nudipes* the supraorbital ridges are very strongly developed. The anterior palatal foramina extend to the level of the anterior margin of the first molars. The pterygoid processes are heavy and their lower margins flare laterally more than in *nudipes*.

MEASUREMENTS.—Collector's measurements, taken in the flesh: total length, 323 mm.; tail length, 164; length of hind foot with claw, 37; height of ear, 15. Skull measurements: greatest length, 36.9; condylobasal length, 36.7; length of nasal suture, 15.3; zygomatic breadth, 18.8; interorbital breadth, 4.6; breadth of brain case, 13.5; length of interparietal, 4.0; breadth of interparietal, 7.8; greatest skull height, 11.9; length of anterior palatal foramina, 8.5; width of palate inside M^1 , 3.4; length of bullae, 6.0; alveolar length of upper tooth row, 6.7; width M^1 , 2.4; condylo-incisive length of mandible, 26.3.

The type was obtained from a workman who said that he had caught it at the border between grassland and forest.

Specimens from Luluabourg are intermediate between *nudipes* and *edsoni* but nearer the former.

This mouse is named for Mr. Franklin Edson, III. He and Doctor Chapin made for this museum an excellent collection of mammals of the south bank of the middle Congo.

***Aethomys walambae hintoni*, new subspecies**

TYPE.—British Museum No. 7.12.13.46. Male adult. Collected at Kambove, Katanga (altitude 4400 feet) March 1, 1907, by S. A. Neave. The type is a well-made skin in unworn pelage, accompanied by a skull complete except for a narrow piece of the brain case extending from the center of the left parietal to the lowest point of the left temporal. The molars are well worn.

GENERAL CHARACTER.—Darker and redder than *walambae*. The adults have a unicolored tail, which is shorter than in true *walambae*. The skull is also narrower than in the typical race.

DESCRIPTION.—General color near Russet above, paling on the sides and grading without sharp demarcation into very pale gray on the under surface. The cheeks are grayish. There is no dark orbital ring. The hands and feet are white, as is typical in the genus. The ears, which are almost naked, are lighter in color than the general dorsal coloration. The scales of the entire tail are uniformly Bone Brown. The numerous short hairs of the tail are dark brown, except for those of the basal half of the under side, which are white.

The skull resembles that of typical *walambae*, but is somewhat more slender, has a narrower palate, and a broader zygomatic plate.

MEASUREMENTS.—Measurements of the type of *walambae* (those of the skull are mine) are given in parentheses, following the measurements of *hintoni*. Collector's measurements are: length of head and body, 156 (155) mm.; tail length, 119 (128); length of hind foot without claw, 26 (25, which is wrong, since in the dried specimen the foot measures 26.5 without claw). The ear measurement is recorded as 12.5, obviously an error. Cranial measurements: greatest length, 38.1 (37.8); condylo-incisive length, 37.4 (36.8); palatal length, 20.0 (18.9); greatest breadth, 19.5 (21.0); interorbital breadth, 5.7 (6.2); breadth of brain case, 15.0 (14.9); breadth of zygomatic plate, 6.2 (5.6); length of nasals, 15.0 (14.9); occipital height of brain case, 10.5 (10.5); length of bullae, 7.8 (7.9); breadth of palate across M^1 , 8.0 (8.6); alveolar length of upper molar row, 7.9 (7.6); width M^1 , 2.5 (2.4); greatest length of mandible, 27.1 (27.0).

This race is distinguished from *A. w. pedester* of southwestern Uganda by its shorter foot, unpigmented skin of hands and feet, and lesser pigment in the tail scales, shorter tail, smaller skull, smaller bullae, narrower palatal foramina, the vertical edge of the zygomatic plate, and longer tooth row. From *A. w. amalae* of the Southern Guaso Nyiro, it is differentiated in redder pelage, dark under side of the tail, longer tooth row, larger bullae, and narrower palatal foramina.

I have examined two topotypes in the British Museum. Also referred to *A. w. hintoni* are specimens in the Musée du Congo Belge. Two are from Elizabethville (Nos. 10086-10087) and one from wooded savanna at Lubumbashi, near Elizabethville (No. 10677). Specimens seen from various localities in Northern Rhodesia are referable to *A. w. walambae*.

It is my pleasure to distinguish this animal by naming it for Mr. M. A. C. Hinton.

***Aethomys chrysophilus dollmani*, new subspecies**

TYPE.—British Museum No. 7.12.13.52. Male adult. Collected along the upper Lufira River, Katanga, Belgian Congo, June 15, 1907, by S. A. Neave. The type is a well-made skin with skull. The skin is in good condition except that the tail has been pushed up into the body for a considerable portion of its length. The skull, with greatly worn molars, is complete except for the left malar bone and a fragment of the brain case extending from the coronal suture to the root of the left zygoma.

GENERAL CHARACTER.—A northern representative of *A. chrysophilus* with darker hair, grayer belly, and comparatively short tail.

DESCRIPTION.—General color above Ochraceous-Tawny, interrupted with the exposed Slate Color of the basal three-fourths of the hair shafts. On the flanks this pales gradually. At the lower margin of the flanks there is an abrupt change to a soiled white tone through which the gray basal third of the hair shafts show prominently. The lips and chin are the color of the belly. A large ill-defined spot below the eye is Cinnamon-Buff. The eye ring in the type is inconspicuous, though this is not true in other specimens. The tail is uniformly Warm Sepia, above and below, though inconspicuous white hairs clothe the basal half of the ventral surface. The hands and feet are clear white. The ears are Chocolate.

The skull is similar to that of *A. c. chrysophilus*.

MEASUREMENTS.—Collector's measurements are: head and body, 145.5 mm.; tail, 158.5; hind foot without claw, 28.5; ear, 19. Cranial measurements (those taken from the type of *A. chrysophilus* follow in parentheses): greatest length, 37.5 (37.0); condylobasal length, 36.5 (33.6); palatal length, 18.5 (16.1); zygomatic breadth, 19.4 (18.2); interorbital breadth, 5.6 (5.6); breadth of brain case, 15.0 (14.3); breadth of zygomatic plate, 5.4 (5.0); length of nasals, 15.1 (13.5); length of bullae, 7.0 (6.6); occipital height of brain case, 10.5 (9.3); length of palatal foramina, 9.5 (8.5); alveolar length of upper molars, 7.4 (6.6); width M^1 , 2.1 (2.1); width across M^1 , 7.8 (7.8); greatest length of mandible, 26.4 (23.4).

This race approaches *A. c. hindei* in many respects but differs from that race in having a slightly longer foot, longer tail, less reddish pelage, longer tooth row, higher brain case, and in certain other cranial proportions.

I have examined an additional specimen from the east bank of the Loangwa (B.M. 7.1.11.52), which agrees closely with the type.

The naming of this handsome animal for Captain Guy Dollman is but poor acknowledgment of my indebtedness to that gentleman.

***Thamnomys venustus schoutedeni*, new subspecies**

TYPE.—American Museum of Natural History No. 50066. American Museum Congo Expedition No. 2407. Female adult. Collected at Medje, Ituri district, Belgian Congo, June 14, 1914, by Herbert Lang. The type is a skin with skull, both complete and in good condition.

PARATYPE.—A.M.N.H. No. 49747. Male subadult. Collected March 13, 1910, at Medje, by Herbert Lang.

GENERAL CHARACTER.—Similar to *T. venustus* of the eastern base of Mt. Ruwenzori, but with narrower nasals and muzzle, narrower molars, and longer tail.

DESCRIPTION.—The general color of the back from crown to rump, between Russet and Mars Brown. The flanks pale to Clay Color. There is no dark orbital ring. A small postauricular tuft is pure white. The hairs of the under surface are white-tipped, but their basal third is Deep Neutral Gray. The dorsal surface of the fore feet is colored as the flanks, that of the rear feet about the same though with an obsolescent dark area. The margins of both fore and hind feet are clothed in white hairs. The tail is nearly naked, except at its tip where the hairs are 2-3 mm. long. The general color of the tail is Mars Brown, above and below. The fur of this race is long and soft, in sharp contrast to the crisp fur of *T. rutilans centralis*, which is also found at Medje. However, it is slightly shorter than that of *T. v. venustus*, averaging about 12 mm. in length, dorsally, in the type from Medje, and about 15 mm. in the type from Mt. Ruwenzori.

The skull is like that of the typical race except for its long narrow muzzle, and narrower teeth.

MEASUREMENTS.—The measurements of the type are followed by the measurements of the type of *T. venustus*. When given in parentheses, the latter measurements are taken from the type description; when in brackets, they are my own measurements. Collector's measurements (those of *T. venustus* are the describer's measurements of the spirit specimen): total length, 325 (306) mm.; tail length, 203 (181); length of hind foot, 24 with claw (25 without claw); length of ear, 20 from notch (18 from ?). Cranial measurements: greatest length, 34.3 (34.5); condylo-incisive length, 30.2; basilar length, 26.0 (28); greatest breadth, 15.9 (17.2); length of nasals, 13.5 (12.5); width of combined nasals, 3.7 [4.0]; interorbital breadth, 5.0 (4.9); breadth of brain case, 13.7 (14.3); palatal length, 14.0 (15); diastema, 9.1 (9.4); palatal foramina, 7.6 (8.2); length of upper molar series, 5.7 (6.1); width M^1 , 1.7 [1.9]; condylo-incisive length of mandible, 20.4.

This race of *Thamnomys* is apparently much rarer in the Ituri than *T. rutilans centralis*, for whereas *T. v. schoutedeni* is represented in the

Congo Expedition collections by but two specimens, there are thirty-three of the other.

I am gratified to be able to associate such a handsome rodent with the name of Dr. Henri Schouteden, director of the Musée du Congo Belge, for his numerous contributions to Congo mammalogy and the innumerable courtesies extended to me while I was a visitor in his Museum.

Thamnomys kempfi major, new subspecies

TYPE.—American Museum of Natural History No. 82693, Ruwenzori-Kivu Expedition No. 318. Male adult. Collected at Lukumi, on the north slope of Mt. Karisimbi, central Kivu volcanoes, Belgian Congo (altitude 12,000 feet), June 17, 1927, by James P. Chapin. The type is a skin with skull, complete, though the bullae of the skull are detached. The molars are slightly worn.

PARATYPE.—A.M.N.H. No. 82694, male adult, and No. 82689, female adult, from Kabara, a site at 11,000 feet on the saddle between Mts. Mikeno and Karisimbi.

GENERAL CHARACTER.—Much larger than true *kempfi*, darker, more olivaceous and less rufous than the typical race. The lips are white. The pelage is longer than that of the race of lower altitudes.

DESCRIPTION.—General color of the back Antique Brown to which the guard hairs give a slightly iridescent greenish tint in some lights. The flanks pale gradually to the Ochraceous-Buff of their lower edges. The under parts, with exceptions noted below, are white, washed with Pale Yellow-Orange. Lips, chin, and the medial surfaces of the fore and hind legs are pure white. The tip of the nose is a dark blackish brown, the mystacial and the supralabial regions, Light Orange-Yellow. Moderately long hairs clothing the upper base of the ear conch are Mars Brown, the shorter hairs of the upper half of its outer surface and all the hairs of the inner surface are Antimony Yellow. A broad stripe extending down the center of the fore leg and on to the back of the fore foot is a blackish Mars Brown, bordered with Antimony Yellow. The toes and the margins of the fore feet are white. On the center of the dorsal surface of the rear feet is an area of blackish Mars Brown. This is bordered by a band of Orange-Buff, which color extends up the midline of the foot to the ankle. As in the fore feet, the toes and margins of the furred surface of the rear feet are white. The tail is uniformly blackish brown. The hairs of its basal half are about 1 mm. long, those of its tip 4 mm.

The skull is like that of the typical subspecies, but much larger, as will be seen by the comparative measurements given below.

MEASUREMENTS.—The measurements of the type are followed in parentheses by the published measurements of the type of *T. kempfi*. Collector's measurements: total length, 357 (330) mm.; tail length, 201 (189); length of hind foot, 31 with claw (27.5 without claw). Cranial measurements: greatest length, 39.3 (36); condylo-incisive length, 35.7 (32); basilar length, 30.6 (27.2); zygomatic breadth, 18.9 (16.4); interorbital breadth, 4.8 (4.7); greatest breadth of brain case, 15.4 (14.6); length of nasals, 16.7 (14.8); palatal length, 17.1 (15); length of palatal foramina, 9.5 (8.8); length of upper molar series, 7.5 (7); condylo-incisive length of mandible, 24.2.

Thamnomys kempfi major is the *Hagenia* forest representative of the large tree mouse occurring at the base of the Kivu volcanoes. Count Gyldenstolpe obtained one specimen from 3900 meters (about 13,000 feet) on Mt. Karisimbi, which he noted was larger than Dollman's type of *T. kempfi*.

***Thamnomys (Grammomys) surdaster callithrix*, new subspecies**

TYPE.—American Museum of Natural History No. 49789. American Museum Congo Expedition No. 1876. Male adult. Collected at Garamba, upper Uele district, Belgian Congo, March 14, 1912, by Herbert Lang. The type is a skin with skull, both in good condition. The molars are heavily worn.

GENERAL CHARACTER.—A northern representative of *T. surdaster*, differing from the typical subspecies chiefly in smaller size, and shorter muzzle.

DESCRIPTION.—General color in the middle of the back, Verona Brown, shading on the rump to a russet, near Hays' Russet (not prominent in younger specimens). The flanks are much paler than the back, and in the type are between Buckthorn Brown and Cinnamon-Rufous. A line of Apricot-Buff separates the flank color from the belly color, this line extending continuously from tip of nose to tail base. In the type it is not prominent but in less aged specimens very well marked. The hairs of the under side are Ivory Yellow from base to tip. The dorsum of the fore feet and hind feet Ochraceous Buff. The ears are lightly covered with Warm Sepia hairs. The lengthened hairs of the tail tip are this same color.

The skull is short muzzled, the zygomatica lightly bowed, the supraorbital ridges well developed.

MEASUREMENTS.—Collector's measurements: total length, 270 mm.; length of tail, 160; length of hind foot with claw, 25; height of ear from notch, 18. Cranial measurements: greatest length, 28.2; condylo-incisive length, 25.4; zygomatic breadth, 14.2; interorbital breadth, 4.4; breadth of brain case, 12.3; length of nasals, 10.5; tip of nasals to anterior-superior border of infraorbital foramen, 8.0; palatal length, 12.9; length of anterior palatal foramina, 6.5; breadth of palate inside M^1 , 2.5; length of upper molar tooth row, 4.3; width M^1 , 1.4; condylo-incisive length of mandible, 17.1.

Besides the type, I refer to this species nineteen other specimens in the American Museum, collected at localities in the upper Uele (Faradje and Niangara) by the Congo Expedition, and two specimens in the British Museum. One of these, No. 21.1.8.22, is from the "Congo-Nile Watershed"; the other, No. 87.12.1.80, from Gadda, upper Uele.

***Praomys jacksoni minor*, new subspecies**

TYPE.—American Museum of Natural History No. 86816. Chapin-Edson Collection No. 2035. Male adult. Collected at Lukolela, middle Congo, July 31, 1930, by James P. Chapin. The type is a skin with skull. The left zygoma is missing and parts of the left wall of the brain case are lost or crushed. The molars are heavily worn.

PARATYPES.—A.M.N.H. Nos. 86810 (male adult), 86814 (female adult), 86818 (male adult), 86822 (female adult). All were collected at Lukolela, between July 31 and August 28, 1930.

GENERAL CHARACTER.—Differing from *P. jacksoni* as abundantly represented in American Museum collections from the Ituri and Luluabourg, Kasai, in smaller size, which extends to all of the commonly measured characters.

DESCRIPTION OF THE TYPE.—General color above near Verona Brown, though redder, paling high on the sides to Mikado Brown, which in turn shades into Cinnamon on the lower flanks. The hairs of the entire under surface are white-tipped, their bases Dark Mouse Gray in the pectoral region, lighter toward the rear. Hands and feet are white, unmarked. The eye ring is Mars Brown. Hairs on the tail are very short, scarcely visible. The tail is uniformly dark brown above and below.

The skull, as in *P. jacksoni* from other parts of the Congo, has moderately developed cuneate crests extending very nearly directly from the posterior part of the frontals to the superior orbital rim, three millimeters to the rear of the upper bar of the infraorbital foramen. The zygomatic plate projects well forward as in other true *Praomys*.

MEASUREMENTS.—Measurements of the type are followed by measurements in parentheses of a paratype (No. 86822, a female with moderately worn molars). Collector's measurements: total length, 241 (221) mm.; tail length, 136 (130); hind foot with claw, 25 [sic, probably 22.5] (23). Cranial measurements: greatest length, 29.2 (27.7); condylo-incisive length, 26.9 (25.1); zygomatic breadth, circa 14.0 (13.4); interorbital breadth, 4.7 (4.6); nasal length, 10.7 (10.0); nasals breadth, 3.1 (3.1); length of interparietal, 4.2 (4.1); breadth of interparietal, 8.4 (8.6); length of zygomatic plate, 3.3 (3.1); palatal length, 14.7 (13.9); diastema, 7.9 (7.6); length of upper molar row, crowns, 4.1 (4.1); breadth M^1 , 1.5 (1.5); breadth of palate inside M^1 , 2.9 (2.7); condylo-incisive length of mandible, 18.6 (17.0).

The four *Praomys* now known to occur in the Belgian Congo bear a striking resemblance. Adult specimens from the lowlands, which I have examined, are rather easily identified with one of the named forms on the basis of the assortment of characters used in the following key. The highland race, *P. j. montis* on the other hand, though averaging slightly darker and grayer than *P. j. jacksoni* of the lowlands, is better defined on geographical than on physical grounds. Members of the closely related genus *Hylomyscus*, occurring in the same area, though very similar to *Praomys* are easily told from them by their broader feet and the nature of the zygomatic plate, which is not easily visible from above.

KEY TO THE *Praomys* OF THE CONGO BASIN

A.—Foot length 30 mm. or over; supraorbital-temporal crests weak, amphoral; tail tip naked..... *P. t. lukolelae*.
B.—Foot length less than 30 mm.; supraorbital-temporal ridges moderate or strong, cuneate; tail tip slightly hairy.
a.—Size small, head and body less than 116 mm.; tail less than 140, hind foot less than 24 mm., greatest length of skull less than 27 mm., upper tooth row, 4.2–4.3..... *P. j. minor*.

b.—All measurements greater than in *P. j. minor*; foot length about 26 mm., greatest length of skull about 30 mm., length of upper tooth row about 4.8. *P. j. jacksoni*.

***Praomys tullbergi lukolelæ*, new subspecies**

TYPE.—American Museum of Natural History No. 86811. Chapin-Edson Collection No. 2055. Male adult. Collected at Lukolela, middle Congo, Belgian Congo, August 6, 1930, by James P. Chapin. The type is a skin with skull in good condition.

PARATYPES.—Two specimens from Lukolela, an adult female (No. 86815) and a juvenile female (No. 86823).

GENERAL CHARACTER.—Similar to *tullbergi* but with longer foot and tail, narrower interorbital area, and narrower muzzle.

DESCRIPTION.—General color in the mid line above, Russet, paling to Ochraceous-Tawny on the sides. The change to the belly coloration is abrupt. The tips of the hairs of all the under side are pale ivory through which the basal gray shows prominently. The backs of the four feet are white. The orbital ring is two to four millimeters broad and Warm Sepia in color. A broad pre- and subauricular spot is Pinkish Cinnamon. The large, almost naked ears are a dark brown. The tail, thinly clothed with minute hairs, is Snuff Brown except for the basal part of the under side of the tail which is colorless.

The skull, except for its relatively longer muzzle and lesser interorbital breadth, does not differ from *tullbergi*. The bead of the supraorbital and temporal ridges is not pronounced. The anterior margin of the zygomatic plate does not extend far forward, though more so than in species currently referred to *Hyalomyscus*. The anterior palatal foramina extend backwards only to the level of the first molar.

MEASUREMENTS.—The figures in parentheses following measurements of the type are Thomas' published measurements of the type of *Mus tullbergi*. Collector's measurements: total length, 257 (108+133=241) mm. tail length, 141 (133); length of hind foot, 30 with claw (22 without claw); height of ear, 21 from notch (13.5 above crown). Cranial measurements: greatest length, 32.6; condylo-incisive length, 29.7; nasal tip to back of interparietal, 32.1 (32.3); greatest breadth, 3.7 (4.0); interorbital breadth, 5.2 (5.7); length of interparietal, 5.2 (5.2); breadth interparietal, 9.6 (9.6); palatal length, 15.9 (palate length, 17.8); diastema, 9.6 (9.8); length of upper molar row, 4.8 (crown length 4.7); breadth of M^1 , 1.5 (1.4); breadth of palate inside M^1 , 3.2 (circa 3.3); condylo-incisive length of mandible, 20.6.

The occurrence of this species at Lukolela, along with a representative of *Praomys jacksoni*, would seem to demonstrate that *jacksoni* is not a race of *tullbergi* but, as previously has been suggested, is a distinct species.

***Dendromus haymani*, new species**

TYPE.—British Museum No. 30.11.11.336. Collector's No. 136. Male adult. Collected at Mbogo (1° N. \times 30° E.), Belgian Congo, March 14, 1930, by R. W. Hayman. The type is a skin with skull, the latter with an imperfect palate.

GENERAL CHARACTER.—A white-bellied *Dendromus* (*sensu stricto*) resembling *D. ruddi* but much lighter in color than that species. The hind feet are large, the tail long. The skull is relatively broad.

DESCRIPTION.—General color above from shoulders to tail, Tawny-Olive. The dorsal stripe commences as a broad diffuse band between the ears, which narrows and becomes very dark in the middle of the back. The stripe tapers out gently to its end at the base of the tail. A small dark spot also occurs on the crown. Around each eye is a broad light band. Above the eyes, where the bands are lightest in shade, the width is about three millimeters. The general color of the bands is a somewhat gray Pinkish-Cinnamon. The inner surface of the ear conch is clothed with hairs the color of the flanks. Hairs on the outer surface of the conch are colored like the interauricular pelage, and are conspicuously dark. A small tuft of white hair lies at the base of each ear. Fore and hind feet are white. The hairs of the under surface are white, to their bases. The tail is Sepia above, slightly lighter below.

The skull is relatively broad and has molars large for the size of the skull. The zygomatic plate also is unusually wide.

MEASUREMENTS.—Collector's measurements: head and body, 65 mm.; tail, 79; hind foot (without claw), 16; ear, 12. Cranial measurements: greatest length, 21.0; condylo-incisive length, 18.3; zygomatic breadth, 10.9; breadth of brain case, 9.7; interorbital constriction, 3.4; length of nasals, 8.5; width of zygomatic plate, 1.5; diastema, 5.2; length of palatal foramina, 4.2; width of palate across first molars, 4.6; crown length of upper molar row, 3.4; width M^1 , 1.1.

At Mboga, the De Walden Expedition obtained six specimens of *Dendromus lineatus*, two of *D. ruddi*, and but a single specimen of the form here described. Since near this locality both forest and savanna are available, it is possible that these three do not all occur in the same area. A few comparative measurements of these three species as they occur at Mboga had best be recorded here.

	<i>D. lineatus</i> 30.11.11.338 ♀	<i>D. ruddi</i> 30.11.11.333 ♀	<i>D. haymani</i> Type ♂
Condition M^1 .	much worn	moderately worn	slightly worn
Head and body	60	63	65
Tail	79	82	90
Hind foot	16	17	18
Ear	12	11	12
Greatest length skull	20.0	21.1	21.0
Zygomatic width	10.6	10.8	10.9
Width brain case	9.5	10.2	9.7
Interorbital constriction	2.6	3.2	3.4
Width zygomatic plate	1.3	1.1	1.5
Diastema	5.1	4.9	5.2
Length palatal foramen	4.0	4.0	4.2
Width across M^1	4.3	4.4	4.6
Crown length upper molar row	3.1	3.2	3.5

It is a pleasure to name this tree mouse after the collector of such an interesting series.

***Steatomys pratensis kasaicus*, new subspecies**

TYPE.—American Museum of Natural History No. 86077. Male adult. Collected at Luluabourg, Kasai district, Belgian Congo, May 25, 1923, by the Reverend R. Callewaert. The type is a skin with skull. The skin is relatively grease free and is complete except for the terminal sixth of the tail. The skull shows heavily worn molars and is complete except for the right zygoma and squamosal.

GENERAL CHARACTER.—Similar to *S. p. pratensis* but larger and slightly redder.

DESCRIPTION.—Cinnamon-Brown above, Buckthorn Brown on the lower flanks, the transition between the two, gradual. Throughout this pigmented area there are black-tipped guard hairs, uniformly distributed, and giving a faint peppery effect to the general tone. The hairs of the under side are pure white, as are also those of the hands and feet. The ears are clothed with blackish-brown hair. The dark eye ring is about 1 mm. wide and conspicuous. The upper side of the tail is near Mummy Brown, the under side white.

The skull is relatively long and narrow with small bullae and narrow palatal foramina.

MEASUREMENTS.—Collector's measurements: total length, 150 mm.; tail length, 47; length hind foot, 17. Cranial measurements: greatest length, 28.7; condylo-incisive length, 26.8; zygomatic breadth, circa 13.5; interorbital breadth, 4.3; breadth of brain case, 11.3; length of nasals, 13.3; palatal length, 14.8; length of palatal foramina, 5.6; breadth across palatal foramina, 2.6; breadth of palate across, M^1 , 6.6; length of upper molar row, 4.2; width M^1 , 1.5; condylo-incisive length of mandible, 18.3.

There are twelve skins with eleven skulls of this race in American Museum collections, all obtained at Luluabourg by Father Callewaert.

